



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/302,859	04/30/1999	ROBERT ADAMS	AD-200J	7551

7590 09/30/2003

JOSEPH S IANDIORIO
IANDIORIO AND TESKA
260 BEAR HILL ROAD
WALTHAM, MA 024511018

EXAMINER

KIM, KEVIN

ART UNIT	PAPER NUMBER
----------	--------------

2634

DATE MAILED: 09/30/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/302,859

Applicant(s)

ADAMS ET AL.

Examiner

Kevin Y Kim

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-6, 9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-6, 9, 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed July 11, 2003 have been fully considered but they are not persuasive.

Applicant asserts that the Chen et al patent, cited against the claims, fails to teach a quantized feedback signal to the input means. However, col. 7, lines 21-33 of the patent in connection with Fig.2 clearly describes providing a quantized feedback signal to the difference means (21). It appears that applicant considered that because the output of the quantizer in the Chen patent is not directly provided to the input (21), it fails to provide a quantized feedback signal. But the combination of the quantizer (25), Element selection logic (26) and DAC (27) reads on the claimed quantizer circuit. It is acknowledged that the examiner's reading of the Element selection logic (26) and DAC (27) as a feedback circuit in the previous Office action may have led to the above assertion by applicant. In this respect, the rejection is hereby rewritten to more precisely describe the prior art against the claims as follows.

Applicant also repeats that the prior art fails to disclose a difference amplifier that reduces "the input-referred thermal noise by a factor of approximately the gain of said amplifier circuit." However, as pointed out in the previous Office actions, without any qualifying further limitations on the amplifier, it is presumed that the identically disclosed amplifier of the prior art in terms of structure and connection performs the same claimed function.

Claim Rejections - 35 USC § 102

Art Unit: 2634

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 4-6, 9 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al (US 6,304,608) in view of Heikkilä et al (US 5,805,093). This is a multiple Reference 35 U.S.C. 102 Rejections. See MPEP 2131.01.

Consider claims 4,6 and 9 first. Referring to Fig. 2, Chen et al discloses a sigma delta modulator, comprising an input circuit/summing circuit (21) for receiving an input (V_{in}) and a feedback signal and providing a difference signal, a filter circuit (22), a quantizer circuit (25,26,27) and a feedback circuit (signal path from the DAC to the summing circuit), wherein the input circuit includes an amplifying means (g_1) for amplifying the difference signal. See col. 7, lines 21-33 in particular. Regarding a sampling capacitor and switch in the filter recited in the claims, Heikkilä et al shows that a sampling capacitor and switch, a characteristic not disclosed in the Chen et al reference, is inherent in an integrator used in the analog to digital conversion system. See Fig.2. The claims further limit that the amplifier serves “to reduce the input-referred thermal noise by a factor of approximately the gain.” However, no specifics about the amplifier are recited that allows the stated function. In this light, the amplifier (g_1) in the sigma delta modulator of Chen et al is considered to reduce the input-referred thermal noise by a factor

Art Unit: 2634

of approximately the gain because it is presumed that the identically disclosed amplifier must have same effects.


Regarding claims 5 and 10, see col.11, line 53 teaching the amplifier gain (g_1) greater than one.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 703-305-4082. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

kvk



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600